

[54] SYMBOLIC LANGUAGE DATA PROCESSING SYSTEM

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[57] ABSTRACT

A symbolic language data processing system comprises a sequencer unit, a data path unit, a memory control unit, a front-end processor, an I/O and a main memory connected on a common Lbus to which other peripherals and data units can be connected for intercommunication. The system architecture includes a novel bus network, a synergistic combination of the Lbus, microtasking, centralized error correction circuitry and a synchronous pipelined memory including processor mediated direct memory access, stack cache windows with two segment addressing, a page hash table and page hash table cache, garbage collection and pointer control, a close connection of the macrocode and microcode which enables one to take interrupts in and out of the macrocode instruction sequences, parallel data type checking with tagged architecture, procedure call and microcode support, a generic bus and a unique instruction set to support symbolic language processing.

6 Claims, 22 Drawing Sheets

